

REMARKS

Claims 2-21 are pending in the present application.

At the outset, Applicants wish to thank Examiner Wong for the helpful and courteous discussion with their undersigned Representative on July 23, 2003. The following remarks will expand and summarize the issues discussed. Applicants would also like to thank Examiner Wong for withdrawing the Restriction Requirement of January 13, 2003 (see paper number 15, page 2, lines 3-4).

Present Claims 2-6, and 8-12 relate to methods of preparing a dairy product, comprising modifying a raw material milk by causing transglutaminase to act on said raw material milk, wherein a reducing agent is added to said raw material milk when said transglutaminase is caused to act on said raw material milk.

Present Claim 7 relates to dairy products which have been obtained, or can be obtained, by using the raw material milk modified by the method of Claim 8.

Present Claims 13-21 relate to modified raw material milks, prepared by a method, comprising modifying a raw material milk by causing transglutaminase to act on said raw material milk, wherein a reducing agent is added to said raw material milk when said transglutaminase is caused to act on said raw material milk.

The inventors have surprisingly found that the presently claimed methods afford dairy products with improved physical properties.

The rejection of Claims 2-21 under 35 U.S.C. §103(a) over Dickinson et al in view of Jiang et al and Soeda et al is respectfully traversed.

Dickinson et al discloses the rheology of certain milk protein gels and protein-stabilized emulsion gels cross-linked with transglutaminase. This reference also discloses the effects of the addition of lecithin. However, Dickinson et al only discloses the use of lecithin for its emulsifier properties (Abstract on page 1371 and the paragraph bridging pages 1375 and 1376).

The Examiner avers that Dickinson et al disclose adding a transglutaminase (TG) and a reducing agent to milk (paper number 15, page 3, lines 15-16). However, Applicants note that this assertion by the Examiner is incorrect for the following reasons:

First, Dickinson et al do not disclose or suggest the addition of a TG to milk of any variety, much less a "raw material milk" of Claim 8 (defined on page 11, lines 11-18 of the present specification). Instead, Dickinson et al disclose the production of enzymatically cross-linked *milk protein* gels, where the milk protein is a β -lactoglobulin or sodium caseinate (see Abstract and 'Material and Methods' on page 1372). Therefore, the substrate upon which the TG is to act in the present invention is different from that of Dickinson et al and, as such, this reference fails to render the claimed invention obvious, much less realize the advantages flowing therefrom. Moreover, the disclosures of Jiang et al (cited solely for the combination of TG and a reducing agent) and Soeda et al (cited for the combination of TG and a thiol group containing material) do not cure this deficiency in the disclosure of Dickinson et al. Therefore, for this reason alone, the presently claimed invention is not obvious in view of the combined disclosures of Dickinson et al, Jiang et al and Soeda et al.

Second, the Examiner's assertion that Dickinson et al disclose the addition of a reducing agent, along with the TG, is incorrect. In fact, in the last paragraph on page 1373, Dickinson et al state "we have found here that a concentrated solution of β -lactoglobulin at pH 7 can be used to make a gel with this transglutaminase sample *without... the addition of a*

reducing agent." This disclosure by Dickinson et al would effectively *teach away* from adding a reducing agent. Therefore, there can be no reasonable motivation to combine the disclosure Dickinson et al with that of Jiang et al and Soeda et al, which do disclose the addition of a reducing agent to TG. And, for this additional reason, the present invention is not obvious in view of the combined disclosures of Dickinson et al, Jiang et al and Soeda et al.

Applicants wish to thank Examiner Wong for recognizing the aforementioned deficiencies in the disclosure of Dickinson et al, stating: "Dickinson et al is directed to a cross-linked milk protein gel whereas the claimed invention is directed to a raw milk material." (paper number 17). Applicants would also like to thank Examiner Wong for the indication that "Dickinson et al will be withdrawn as a reference."

Accordingly, for all of these reasons, the rejection should be withdrawn.

With respect to the Examiner's indication that the claims will be evaluated for enablement of any and all reducing agents, Applicants submit that sufficient guidance has been provided in the present specification to enable the skilled artisan to practice the present invention without undue experimentation. The Examiner's attention is directed to page 13, line 17 to page 14, line 1, which discusses exemplary reducing agents. At page 14, lines 2-15, the quantity of the reducing agent is discussed. And, page 14, line 16 to page 15, line 2 sets forth the temporal constraints of reducing agent addition. Moreover, Applicants provide several examples on pages 19-39 into which the skilled artisan may employ any candidate reducing agent to test its ability to support the present invention. Accordingly, determination of suitable reducing agents for use in the present invention would require nothing more than routine skill in the art. As such, Applicants submit that the present invention is fully enabled.

Applicants note that all of the presently pending claims have been fully searched on the merits and no amendments have been made in response to the outstanding Office Action. Therefore, any new ground of rejection would not be necessitated by Applicants' amendment. Accordingly, it is expected that any new ground of rejection would be in a new non-final Office Action.

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No. 24,618

Vincent K. Shier, Ph.D.
Registration No. 50,552



22850

(703) 413-3000
Fax #: (703) 413-2220
NFO/VKS